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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/626,738	07/26/2000	Takehiko Nakai	35.C14646	9374

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EXAMINER

AMARI, ALESSANDRO V

ART UNIT PAPER NUMBER

2872

DATE MAILED: 02/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/626,738

Applicant(s)

NAKAI, TAKEHIKO

Examiner

Amari, Alessandro V.

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species 6 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that a thorough search of the relevant art for one species will require substantial consideration of the art relevant to the other species. This is not found persuasive because species are based on independent inventions and the applicant has failed to establish that the species are obvious variants. As such, the election is proper, further; clearly the examination and analysis of six separate species would place a burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. Figures 16-22 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features concerning the pitches of corresponding grating portions of the first and second diffraction gratings being equal as recited in claim 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 13 and 15 objected to because of the following informalities:

Regarding claim 13, the phrase "the cemented surface" lacks proper antecedent basis.

Regarding claim 15, that the phrase "a diffraction optical element" should be recited as "the diffraction optical element".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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6. Claims 7-12 and 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishii U.S. Patent 6,157,488.

In regard to claim 7, Ishii discloses (see Figure 12) a diffraction optical element in which a plurality of diffraction gratings are laminated, comprising: a first diffraction grating (101) which is formed on a curved surface with a material of a predetermined dispersion; and a second diffraction grating (103) which is formed on a curved surface with a material of a dispersion different from that of the first diffraction grating and adjacent to the first diffraction grating, wherein the pitches of corresponding grating portions of the first and second diffraction gratings are equal over the range of use as described in column 13, lines 35-53 and as shown in Figure 12.

Regarding claim 8, Ishii discloses (see Figure 12) that the substrates on which said diffraction gratings are formed are joined together in the non-grating area (102) of each of said diffraction gratings as described in column 15, lines 8-16.

Regarding claim 9, Ishii discloses that at least one of said laminated diffraction gratings has at least one diffraction grating differing from it in the direction of the grating shape of the grating portion as shown in Figure 12.

Regarding claim 10, Ishii discloses that the wavelength area used is a visible range as described in column 13, lines 3-8.

Regarding claim 11, Ishii discloses that at least one of said plurality of diffraction gratings is such that the material forming said diffraction gratings is the same as the material forming a substrate on which said diffraction gratings are provided as described in column 13, lines 35-54.

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Regarding claim 12, Ishii discloses that said substrate has lens action as described in column 13, lines 35-54.

Regarding claim 14, Ishii discloses that said plurality of diffraction gratings are laminated so that the diffraction efficiency of a particular order may heighten in the entire wavelength area used as described in column 14, lines 31-64.

Regarding claim 15, Ishii discloses an optical system using a diffraction optical element as shown in Figures 22 and 23 and as described in column 13, lines 9-30.

Regarding claim 16, Ishii discloses an imaging optical system as shown in Figures 22 and 23 and as described in column 13, lines 9-30.

Regarding claim 17, Ishii discloses an observation optical system as shown in Figures 22 and 23 and as described in column 13, lines 9-30.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii U.S. Patent 6,157,488 in view of Ogino et al. U.S. Patent 5,995,279.

Regarding claim 13, Ishii teaches the invention as set forth above but does not teach the diffraction optical element formed on the cemented surface of a cemented lens. Ogino et al. does teach the diffraction optical element formed on the cemented surface of a cemented lens as shown in Figures 5A-5F and as described in column 3,

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lines 3-33. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the diffraction grating on the cemented surface of a cemented lens as taught by Ogino et al. in the diffractive optical element of Ishii in order to create a compact diffractive optical element.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday from 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava 11/11
February 11, 2002

Thông Nguyễn
Primary Examiner